



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

4.0

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,530	10/27/2003	Holger Richert	SANZ-251	1899

24972 7590 12/26/2007
FULBRIGHT & JAWORSKI, LLP
666 FIFTH AVE
NEW YORK, NY 10103-3198

EXAMINER

BAUER, SCOTT ALLEN

ART UNIT	PAPER NUMBER
----------	--------------

2836

MAIL DATE	DELIVERY MODE
-----------	---------------

12/26/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/694,530

Applicant(s)

RICHERT ET AL.

Examiner

Scott Bauer

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 October 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 August 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

1. Claims 21, 23 & 32 are rejected under 35 U.S.C. 102(e) as being anticipated by Bauer et al. (US 6,297,610).

With regard to claim 21, Bauer et al., in Figure 3, discloses a configuration for n consumers (6) of electric energy, of which m consumers are supplied simultaneously with energy, where $m < n$, and whereby a modular energy supply (10) comprising k energy modules is provided, and whereby the sum of the power supplyable by the k energy modules is smaller than the power which would be necessary, if all n consumers simultaneously required electrical power, wherein a control is provided which connects as many energy modules to respective one of the m consumers so that this consumer receives the power required by said consumer (column 1 lines 31-49).

With regard to claim 32, Bauer discloses the configuration of claim 21 wherein all of the energies are of the same power (column 4, lines 48-54).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 22, 23, 25 & 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al. (US 6,297,610) in view of Sellers (US 5,584,974).

With regard to claim 22, Bauer et al. teaches the configuration as claimed in claim 21.

Bauer et al. does not teach that the consumers are sputter installations, with each cathode of a sputter installation having its own arc management.

Sellers et al., teaches an arc control and switching element protection for a pulsed DC cathode sputtering power supply wherein a power supply provides power to a sputter installation, with each cathode of a sputter installation having its own arc management (column 4 lines 25-28).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bauer et al. with Sellers, by using the system of Bauer et al. to drive a plurality of cathode sputtering installations with arc

management as taught by Sellers, for the purpose of providing power to the sputters of Sellers in an economic and cheap manner.

With regard to claim 23, Bauer et al., in Figure 1, discloses the configuration as claimed in claim 21.

Bauer et al. does not teach that the electric energy is realized by DC current.

Sellers, teaches a device powered by electric energy realized by DC current.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bauer et al. with Seller, by using the system of Bauer et al. in a DC system as taught by Sellers, for the purpose of allowing the system to be used in a wide range of applications thus increasing the usefulness of the device.

With regard to claims 25 & 31, Bauer et al. teaches the configuration as claimed in claim 21 and further that the electric energy is realized by DC current.

Bauer et al. does not teach that the electric energy is realized by pulsed DC current or that a pulse generator is assigned to each cathode of a sputter installation.

Sellers, in Figure 1, teaches that a DC power supply can be converted to a pulse DC current by a pulse generator (18) assigned to a cathode.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bauer et al. with Sellers, by using a pulse DC generator taught by Sellers to convert the DC current of the power supplies of

Bauer to pulsed DC current prior to sending the power to the load, for the purpose of allowing the device of Bauer et al. to be used to power various types of loads thus increasing the robustness of the circuit.

3. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al. (US 6,297,610) in view of Lau (US 5,444,333).

With regard to Claim 24, Bauer et al. teaches the configuration as claimed in claim 21.

Bauer et al. does not teach that the electric energy is realized by an AC current.

Lau, in Figure 1, teaches a circuit wherein the DC current of a DC power supply (12) is converted to AC current by an inverter (14) prior to being sent to the load (26).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bauer et al. with Lau, by using an inverter taught by Lau to convert the DC current of the power supplies of Bauer to AC current prior to sending the power to the load, for the purpose of allowing the device of Bauer et al. to be used to power various types of loads thus increasing the robustness of the circuit.

4. Claims 26-28 are is rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al. (US 6,297,610) in view of Mahler et al. (US 5,429,705).

With regard to claim 26-28, Bauer et al. teaches the configuration as claimed in claims 22-24.

Bauer et al. does not teach that each cathode is provided with its own adaptation network.

Mahler et al. teaches an apparatus for coating and/or etching substrates in a vacuum chamber wherein the power input of the device is provided with an adaptation network (column 2 lines 43-49).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bauer et al. with Mahler et al., by using the device of Bauer et al. to power the adaptive network and sputter installation of Mahler et al., for the purpose of for the purpose of allowing the system to be used in a wide range of applications thus increasing the usefulness of the device.

5. Claims 29 & 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bauer et al. (US 6,297,610) in view of Milde et al. (US 6,420,863).

With regard to Claim 29, Bauer et al. teaches the configuration as claimed in claim 21.

Bauer et al. does not teach that the consumers are sputter installations with each installation including two cathodes to which one pole reversal unit is assigned.

Milde et al., in Figure 1A, teaches a method for monitoring an alternating current discharge on a double electrode wherein a power supply (5) is coupled to a switching unit wherein one cathode is coupled to a pole reversal unit.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bauer et al. with Milde et al., by using the power supply device of Bauer et al. to supply power to the sputter installation of Milde et al., for the purpose of allowing the system to be used in a wide range of applications thus increasing the usefulness of the device.

With regard to Claim 30, Bauer et al. teaches the configuration as claimed in claim 21.

Bauer et al. does not teach that the consumer are sputter installations with each installation including two cathodes, of which the one cathode is connected to a pole of an AC voltage and the other cathode to the other pole of this AC voltage.

Milde et al., in Figure 1A, teaches a method for monitoring an alternating current discharge on a double electrode wherein the consumer are sputter installations with each installation including two cathodes, of which the one cathode is connected to a pole of an AC voltage and the other cathode to the other pole of this AC voltage.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Bauer et al. with Milde et al., by using the power supply device of Bauer et al. to supply power to the sputter installation of Milde et al., f

for the purpose of allowing the system to be used in a wide range of applications thus increasing the usefulness of the device.

Response to Arguments

Applicants first state that Bauer does not teach all of the claim elements cited in claim 21. Specifically Applicants state that Bauer does not teach that m consumers out of n consumers are supplied simultaneously with energy and that a variable speed drive is not a source of electrical energy. It is asserted that the relationship $m < n$ is nowhere disclosed in the reference and that the Examiner has not specifically shown where this feature is described. However, on line 2 page 3 of the previous action Applicant is directed to column 1 lines 31-49 of the Bauer reference. Bauer teaches that ideally, every load would have its own power source. However, this scheme is not appropriate in larger systems as a substantial expense would be involved. Instead, Bauer teaches that economies can be realized if the number of motors required to run simultaneously is lower or substantially lower than the total number of motors, which is frequently the case. This in turn reduces the amount VSD's required to run at the same time. As such, it is believed that Bauer satisfies the $m < n$ condition.

With regard to Applicant's arguments that the VSD's of Bauer are not a source of electrical energy because the energy is variable, Applicant is directed to column 1 lines 16-21 of Bauer. The reference states that the VSD provides output power to the loads and that they must provide the correct control voltage, current or frequency input to the

desired loads. As such it is believed that the VSD's of Bauer are sources of electrical energy.

Next Applicants argue that the reference does not teach that the sum of the power supplyable by the k energy modules is smaller than the power which would be necessary if all consumers simultaneously required electric power. Again, in column 1 lines 31-49, Bauer states that the number of VSD's can be reduced to the number of loads required to run at the same time, which Bauer states is lower or substantially lower than the total number of loads. Further, the abstract of the disclosure states that the number of drivers is less than the number of devices of the system.

Next Applicants state that Bauer teaches the opposite of what is claimed and cites lines 33-34 of column 2 wherein Bauer teaches "... so that all of the motors (consumers) can be simultaneously operated...". However, Applicants are pointing to lines that teach an ideal system of prior art. In fact the system taught by Bauer was designed because it was recognized that this ideal situation is not always possible. As stated above, the remaining lines 35-49 teaches that not all of the consumers will be operated simultaneously.

Applicants point out that in the previous action, claim 21 was rejected in view of Berthaud. It is believed that Applicants intended to refer to the rejection of claim 32 as this is the claim with reference to Berthaud. As can be seen from the second page of the office action item number 1, claim 32 was rejected by Bauer as well. The reference to the Berthaud reference was a typographical error and was rejected in view of Bauer as well as noted on the second page. Further, the rejection of claim 32 points to column

4 lines 48-54, which is where the supporting teaching can be found in the Bauer reference. This section explains that all of the consumers are the same kind of device and thus would require the same power. The correction of the typographical error did not change the rejection.

Applicants next argue that Sellers does not teach that each cathode of a sputter installation has its own arc management. However, the device of Sellers teaches that a cathode of a single sputter installation is provided with its own arc management as described in col. 4 lines 25-28 as pointed out by Applicants. Bauer teaches a plurality of loads. If the plurality of loads were the sputters of Sellers then each cathode of a sputter installation would necessarily have its own arc management.

Applicants next argue the combinability of Bauer and Sellers stating that Bauer is concerned with the control of stage equipment in a theater and that Sellers is concerned with an arc control in a sputtering power supply. Applicants also point out that the two references are located in different classes in both US and international Classification systems and as such the two references are non-analogous art.

However, It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham, 2 USPQ2d 1647 (1987)*.

Although the Bauer reference is concerned with motors and VSD's, the system of Bauer could be used for a wide range of purposes. The system of Bauer could drive any system that has multiple energy sources and consumers. The Sellers reference

was used to reject the claim because it was needed to describe an element of the system in which the claimed apparatus is to be employed.

Applicants next argue the rejection of claim 23. Applicant states that Sellers does not teach that the power supply is a DC power supply. However, as can be seen from Fig. 1 of Sellers, the device (10) is labeled as a DC power supply.

Applicants next argue the rejection of claim 25. Applicants argue that the pulsed DC generators of Sellers could not be incorporated into Bauer because the motors of Bauer are not step motors. However, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981). If one of ordinary skill in the art viewed both of the Bauer and Sellers references, one would understand (particularly from Fig. 3 of Bauer) that the system could be provided to drive any plurality of consumers and energy sources. If one of ordinary skill in the art desired that the consumers (6) be devices that are powered by pulsed DC power, then one would recognize that the power sources (10) could be pulsed DC generators rather than VSD's.

With regard to claim 31, Sellers teaches that a single sputter installation is assigned a single DC pulse generator (18). If one of ordinary skill in the art has a plurality of sputter installation as shown in fig. 1 of sellers, there would also be a plurality of DC pulse generators, each one assigned to its respective sputter installation.

With regard to the rejection of claim 24, Lau teaches that an AC current can be sent to a load. If one of ordinary skill in the art were interested in powering an AC load, they would have recognized that an AC power supply would have been used.

With regard to claims 26-28, Applicants argue that Bauer in view of Mahler does not teach that each cathode is provided with its own adaptive network. As mentioned above, if a plurality of sputter installations as taught by Mahler were used as the consumers in Bauer, each one would necessarily have its own adaptive network as all sputter installations would be identical.

Applicants argue the rejections of claims 29 & 30 next. Applicant argues that there is no possible way of to make the alleged combination of Milde and Bauer. Applicants state that it would be impossible to add the drawings of Milde into the drawings of Bauer. Again however, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

With regard to claim 30, Applicant argues that switching element 4 is not an AC voltage source and that the supply (5) of Milde is the AC source. The switching unit of Milde still provides the installation with AC power however; it realizes pole reversal to the cathodes. Further, the units 4 & 5 could be taken together to teach the AC power source as recited in the claim.

It is believed that all arguments have been addressed and as such, the rejection of claims 21-32 has been maintained.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott Bauer whose telephone number is 571-272-5986. The examiner can normally be reached on M-F 9am-6pm.


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on 571-272-2084. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number:
10/694,530
Art Unit: 2836

Page 14

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

SAB
16 DEC 2007

 12/20/07
MICHAEL SHERRY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800